What Is Claimed Is:

1. A method of producing a ≥4 kilohertz repetition rate narrow width excimer laser beam comprising:

oscillating a laser beam whereby the laser beam exits a first barium fluoride crystal window of a chamber;

controlling the laser beam to a predetermined narrow width; and

passing the predetermined narrow width laser beam through a second barium fluoride crystal window of the chamber to provide a ≥4 kilohertz repetition rate excimer laser beam.

2. A method as claimed in claim 1 wherein the ≥4 kilohertz repetition rate excimer laser beam has a power of greater than or equal to 10 mJ.

3. A method as claimed in claim 1 wherein the barium fluoride crystal windows maintain durability over 500 million pulses of the laser beam

4. An excimer laser comprising:

a source of a laser beam and

one or more windows comprising barium fluoride.

5. An excimer laser according to claim 4, wherein the laser beam has a power of greater than or equal to 10 mJ.

6. An excimer laser according to claim 4, wherein the laser beam has a repetition rate of greater than or equal to 4 KHz.

7. An excimer laser according to claim 5, wherein the laser beam source is argon fluoride.

8. An excimer laser according to claim 4, wherein the laser beam source is krypton fluoride.

9. An excimer laser according to claim 7 further comprising:
a source for annealing the one or more windows.

10. An excimer laser according to claim 4 wherein the windows maintain durability over 500 million pulses of the laser beam.

11. An excimer laser comprising:
a source for a laser beam;
one or more windows comprising barium fluoride; and
a source for annealing the one or more windows.

12. An excimer laser according to claim 11, wherein the laser beam has a power of greater than or equal to 10 mJ.

13. An excimer laser according to claim 11, wherein the laser beam has a repetition rate of greater than or equal to 4 KHz.

14. An excimer laser according to claim 11, wherein the laser beam source is argon fluoride.

15. An excimer laser according to claim 11, wherein the laser beam source is krypton fluoride.

16. An excimer laser window comprising barium fluoride.

17. A method of producing a predetermined narrow width laser beam comprising:
oscillating a laser beam whereby the laser beam exits a first window of a chamber;
widening the laser beam through one or more prisms;
controlling the laser beam to a predetermined narrow width; and

passing the predetermined narrow width laser beam through a second window of the chamber, wherein the first and second windows of the chamber are comprised of barium fluoride.

18. A method according to claim 17, wherein the laser beam has a power of greater than or equal to 10mJ.

19. A method according to claim 17, wherein the laser beam has a repetition rate of greater than or equal to 4 KHz.

20. A method according to claim 17, further comprising pulsing the laser beam over 500 million pulses.

21. A method according to claim 20, wherein the first and second window maintain durability.

22. A method according to claim 20, wherein the laser beam is pulsed over 900 million pulses and the first and second window maintain durability.

23. A method according to claim 17, further comprising:
annealing the first window.

24. A method according to claim 23, further comprising:
annealing the second window.

25. A method according to claim 17,wherein the laser beam source is argon fluoride.

26. A method according to claim 17, wherein the laser beam source is krypton fluoride.